Innovation Strategies on Competitive Advantage of Insurance Companies: Mediating role of regulatory framework

Shem Sikombe*
School of Business,
Copperbelt University
Kitwe, Zambia

https://orcid.org/0000-0001-9377-1522

shemsikombe@gmail.com

* Corresponding author

Joseph Phiri
School of Business,
Copperbelt University
Kitwe, Zambia

https://orcid.org/0000-0003-4066-7064

Chola Mporokoso
School of Business,
Copperbelt University
Kitwe, Zambia

ABSTRACT

This research examines the influence of innovation strategies on the competitive advantage of insurance companies in a developing economy. The study uses a quantitative correlational research design. We collected data from 309 insurance employees in insurance companies in Zambia. A questionnaire was distributed among the participants via Google Forms. Furthermore, Pearson correlation, hierarchical multiple regression, and mediation analyses were conducted using SPSS. The findings indicate that while product and process innovations do not exhibit a statistically significant impact on the competitive advantage of insurance companies, both market innovation and the regulatory framework play a significant role in shaping their competitive positioning. Furthermore, the findings reveal that the regulatory framework mediates the relationship between strategic innovation (involving product, process, and market innovation) and competitive advantage. The study provides insights for insurance companies to enhance their competitive advantage through innovation, emphasising the need to align product, process, and market innovations with regulatory requirements. It also suggests that the regulatory framework can act as a catalyst for innovation, fostering sustainable growth and paving the way for future studies.

Keywords: Product innovation, process innovation, market innovation, regulatory framework, competitive advantage and insurance industry

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1. INTRODUCTION

In recent years, the insurance industry has undergone various changes through financial reforms, advancement of communication, information technologies, globalisation of financial services and economic development. These changes have considerably affected efficiency, market structure and performance in the insurance industry. In this rapidly evolving market, companies face constant competition driven by swiftly advancing technology, underscoring the necessity for companies to prioritise innovation amidst similar product offerings to secure a competitive edge (Mykhailichenko *et al.*, 2021).

Consequently, significant attention has been devoted to cultivating innovative organisations and effectively managing innovation as critical elements for organisational survival (Anwar & Shah, 2021). Competition is often driven by business innovations, technological advancements, and evolving customer demands (Zhou et al., 2024), which offer opportunities for companies to deliver more distinctive and customer-centric products and services, thus enhancing competitiveness.

Innovations in business, technological advancements, and shifting consumer demands can all contribute to competitiveness (Ahmed et al., 2022). Empirical research has linked innovation strategy to a competitive advantage. Nevertheless, some research has shown contradictory findings. For example, Al-Dmour et al. (2020) and Nathan and Rosso (2022) found that although product innovation significantly impacted enterprises' competitive advantage, process innovation had no discernible impact. However, van Lieshout et al. (2021) argue that a company's industry would determine how its innovation strategy affected its competitive advantage based on the interrelatedness of organisational ambidexterity, dynamic capabilities and open innovation.

In the regional context, empirical investigations conducted by Samuel and Kepha (2021), Muthoka et al. (2019), and Mugambi and Kinyua (2020) focused on commercial banking institutions rather than insurance companies. Their findings revealed a significant correlation between innovation strategies and the attainment of competitive advantage within these organisations. Drawing on contextual distinctions, Kungu et al. (2014) demonstrated that customer engagement, innovation, and the effectiveness of competitive strategies are positively and strongly interrelated within the Kenyan market. Similarly, Gathee (2018) identified a strong association between implementing mobile credit finance innovations and transforming customer service processes.

1.1 RESEARCH CONTEXT/BACKGROUND

Since the enactment of the Insurance Act in 2021, Zambia's insurance sector has experienced substantial structural reforms to strengthen financial stability and promote market discipline. These reforms include mandatory minimum local ownership thresholds 30% for insurers and 51% for brokers, a 10% solvency margin, and a 150% capital adequacy ratio, with phased implementation through 2025 (PIA, 2023; Bank of Zambia, 2024). Consequently, gross written premiums increased by 26.6% in 2023, reaching ZMW 7.81 billion (approximately USD 429.55 million) from ZMW 6.03 billion (approximately USD 331.65 million) in 2022, while claims totalled ZMW 3.76 billion (approximately USD 206.80 million). Industry profits rose to ZMW 364 million (approximately USD 20.02 million) (Pensions and Insurance Authority (PIA), 2024). These recent advancements highlight the growing necessity for innovation across digital platforms, product development, and risk analytics to foster competitiveness and financial inclusion in Zambia’s evolving insurance landscape.

Since most companies in the insurance industry offer similar products and services, they are constantly searching for strategies to differentiate themselves from the competition, attract new customers, and retain their current clientele (Mykhailichenko et al., 2021).

Existing research within Zambia (Nyirenda & Nyirenda, 2023) and the broader region has predominantly emphasised commercial banking and e-commerce adoption, rather than innovation strategies. Due to contextual differences, the findings of Wong and Wong (2014) in China, van Lieshout et al. (2021) in Europe, and Shbiel and Olimat (2016) in Jordan cannot be readily generalised to the African context. Recent systematic literature reviews by Odhiambo and Mang (2022) suggest that further research on innovation as a strategic tool in Africa is warranted. Moreover, there remains limited engagement with financial institutions regarding the link between innovation strategies and competitive advantage in African enterprises (Kijogi et al., 2017; Pillay & Njenga, 2021).

Moreover, previous studies on innovation strategy within the insurance industry, such as Kijogi et al. (2017), have focused solely on one dimension of innovation strategy: product innovation. Furthermore, the regulatory environment has often been overlooked in research on the insurance industry, despite being a regulated sector where innovations must comply with regulatory requirements. However, it is essential to acknowledge the regulatory environment's role, as innovative initiatives in the insurance sector must align with regulatory mandates established by the Insurance Association of Zambia (IAZ). Consequently, assuming a direct relationship between innovation and competitive advantage without considering the mediating influence of the regulatory environment may be inconclusive. Therefore, this study seeks to examine the influence of strategic innovations on the competitive advantage of insurance companies and the mediating effect of the regulatory environment.

1.2 RESEARCH OBJECTIVE

The following are the specific research objectives;

1. To establish the effect of product innovation strategy on the competitive advantage of insurance companies.
2. To determine the effect of process innovation strategy on the competitive advantage of insurance companies.
3. To examine the effect of marketing innovation strategy on the competitive advantage of insurance companies.
4. To establish the mediating effect of the regulatory framework on the relationship between innovation strategy (product, process and marketing) and the competitive advantage of insurance companies.

2. LITERATURE REVIEW AND THEORY

The research is anchored on two theories, the transaction cost innovation and dynamic capability theories.

2.1 TRANSACTION COST INNOVATION THEORY

The transaction cost innovation theory suggests that reducing transaction costs is a primary driver of innovation, particularly in financial innovation as a response to technological advancements (Ostagar, 2018). This theory posits that innovations, including product and process innovation, aim to minimise costs by reducing wastage and enhancing process efficiency, thereby contributing to both short-term and long-term competitive advantage (Klapkiv & Klapkiv,

2017). Additionally, innovations are viewed as transactions that achieve more efficient and effective operational processes within organisations, stimulating competitiveness (Ostagar, 2018). Consequently, the transaction cost innovation theory provides insights into how organisations can leverage innovation strategies to reduce operational costs and enhance competitive advantage, making it relevant to this study.

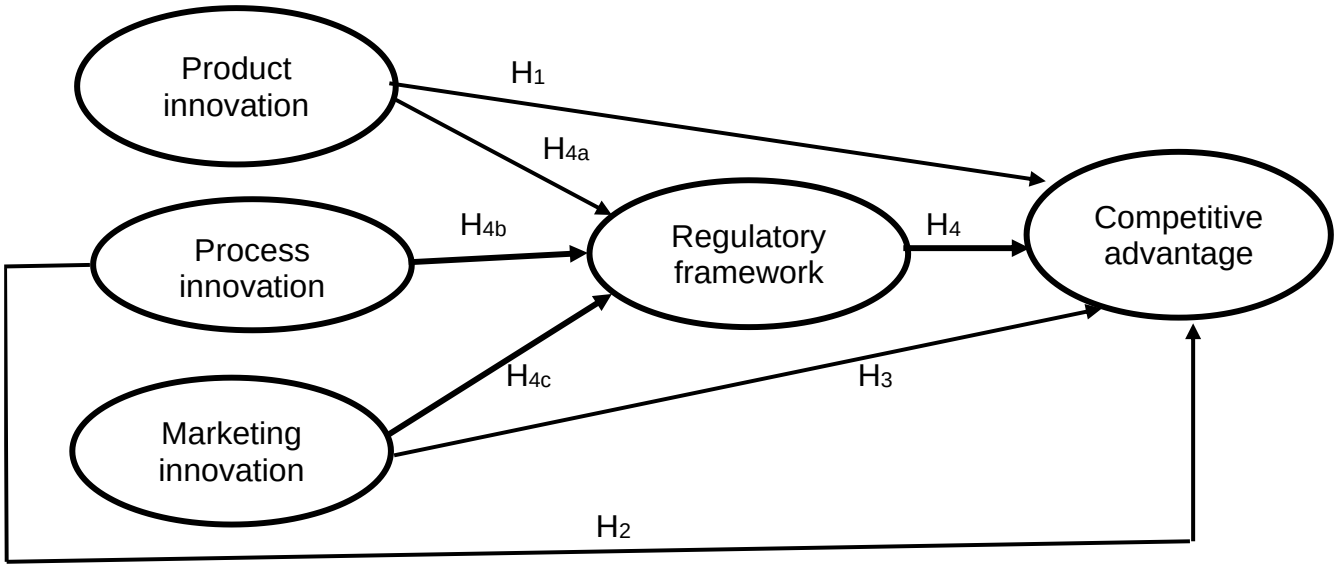
2.2 DYNAMIC CAPABILITIES THEORY

The dynamic capabilities theory, advanced by Teece et al. (1997), emphasises the importance of organisational capabilities in driving competitive advantage in dynamic business environments (Teece, 2018). Dynamic capabilities, which involve integrating, building, and reconfiguring internal and external resources to address rapidly changing business environments, are critical for achieving a superior competitive advantage (Roundy & Fayard, 2019). Human skills and competencies are crucial, as they define employees' ability to innovate and solve emerging problems effectively (Teece *et al.*, 2016). The theory suggests that investing in dynamic capabilities enables companies to adapt to external environmental changes with agility and speed, sustaining competitive advantage (Mero & Haapio, 2022). In the insurance industry, where technological advancements, changing consumer preferences, and regulatory shifts pose significant challenges, dynamic capabilities are vital in driving innovation and maintaining competitive advantage (Nayak *et al.*, 2021).

In summary, the Transaction Cost Innovation Theory, and Dynamic Capabilities Theory collectively provide a strong theoretical foundation for enhancing innovation and competitiveness in the insurance industry by promoting innovative practices, and fostering adaptive capabilities in response to dynamic market environments.

3. CONCEPTUAL FRAMEWORK FOR THIS STUDY

In light of the preceding arguments, the following conceptual model is developed to shed light on the relationships of the variables under consideration. Each of these relationships results in the development of the hypotheses are discussed below.



Adopted from Kisuya et al. (2023)

FIGURE 1: CONCEPTUAL FRAMEWORK.

4. HYPOTHESIS DEVELOPMENT

4.1 PRODUCT INNOVATION STRATEGY AND COMPETITIVE ADVANTAGE

Product innovation strategies involve introducing a product or service that is new to the market or significantly improved in terms of its features or uses (Murni, 2017). Technological advancements primarily drive product innovation, constantly evolving customer preferences, shorter product life cycles, and increasing competition (Odhiambo & Mang, 2022). Furthermore, Tavassoli and Karlsson (2015) analysed the innovation strategies of Swedish companies between 2002 and 2012, using sixteen innovation strategies based on Schumpeter's four types of innovation (process, product, marketing, and organisational), along with various combinations of these types. They argue that companies do not adopt uniform innovation strategies but have various preferences regarding innovation approaches. The researchers also noted that companies maintain diverse innovation strategy preferences over time. These strategies significantly impact companies' competitive advantage. Thus, the following hypothesis;

H_1: Product innovation strategy significantly affects the competitive advantage of insurance companies.

4.2 PROCESS INNOVATION STRATEGY AND COMPETITIVE ADVANTAGE

Process innovation strategies involve implementing new or significantly improved production or delivery methods (Farida & Setiawan, 2022). Process innovation often involves acquiring embedded knowledge that helps organisations counteract internal weaknesses (Ikechuwu & Ndubuisi, 2020). Operational processes constitute a critical foundation for effective innovation implementation and advancing human activity systems across key organisational dimensions, including strategy, structure, business information technology, and organisational culture (Alzoubi et al., 2022). Among various process innovation strategies, business process re-engineering (BPR) stands out as a transformative approach that addresses the fragmentation of operational workflows, typically divided among multiple functional units, by fundamentally redesigning these processes to optimise organisational performance and customer satisfaction (Odhiambo & Mang, 2022; Kisuya et al., 2023). BPR promotes the integration of business processes characterised by high-quality outputs, clear process ownership, customer-centricity, value creation, and cross-functional collaboration (Crema et al., 2014). Despite its strategic importance, the academic literature has yet to fully explore how operational process re-engineering contributes to sustainable competitive advantage, thereby motivating the following hypothesis.

H_2: Process innovation strategy significantly affects the competitive advantage of insurance companies.

4.3 MARKETING INNOVATION STRATEGY AND COMPETITIVE ADVANTAGE

Marketing innovation strategies involve adopting new marketing methods and models that significantly alter product design, packaging, placement, or pricing (Al-Dmour *et al.*, 2020). These strategies aim to meet customer needs, open new markets, or reposition a company's products to enhance sales and drive revenue. Common marketing innovation strategies include pricing models, product offers, design features, placement tactics, and promotional activities. According to Özsomer et al. (2024), innovative marketing strategies strengthen brand relationships and customer experiences, influencing brand marketing efforts and enabling brands to be more customer-focused.

Furthermore, Mira et al. (2024) highlight the strategic importance of both cooperative and competitive approaches adopted by Kenyan radio stations, highlighting their pivotal role in driving innovation and organisational advancement;

moreover, the study affirms that innovation strategies are indispensable for achieving business objectives and securing competitive advantage, thereby proposing the following hypothesis.

H_3: Marketing innovation strategy significantly affects the competitive advantage of insurance companies

4.4 REGULATORY FRAMEWORK, INNOVATION STRATEGY AND COMPETITIVE ADVANTAGE

Competitive intensity and the regulatory regime significantly influence the relationship between innovation and competitive advantage in companies. Competitive intensity refers to fierce competition due to numerous competitors and limited growth opportunities (Niwash *et al.*, 2022). Companies must carefully assess their strategies in such environments, as intense competition can hinder the effectiveness of regular market innovation processes, potentially reducing competitiveness. The effectiveness of an organisation's strategic activities, such as market innovation, depends on how well they align with the competitive environment (Bibi *et al.*, 2020; Kimani & Wagoki, 2015). In highly competitive periods, the risks and costs associated with market innovation can outweigh the benefits, diminishing a company's ability to maintain its competitive edge.

On the other hand, the regulatory regime, which includes rules and guidelines imposed by public authorities, can also moderate the relationship between innovation and competitive advantage. Regulatory frameworks are established to maintain market stability, protect consumers, and oversee industry activities, particularly in sectors like financial services (Hadj *et al.*, 2020). However, strict regulations may limit companies' ability to innovate, as the costs of complying with these regulations often outweigh the potential returns (Adebisi *et al.*, 2021). Empirical studies have shown that market regulations can negatively impact innovation intensity and development (Ahmed *et al.*, 2022). In this context, the regulatory environment may challenge companies' ability to leverage market innovations to enhance competitive advantage. Thus, competitive intensity and regulatory regimes are crucial in shaping how market innovations contribute to a company's competitive success.

H_4: The regulatory framework significantly affects the competitive advantage of insurance companies.

H_{4a}: The regulatory framework has a mediating effect on the relationship between product innovation strategy and the competitive advantage of insurance companies.

H_{4b}: The regulatory framework has a mediating effect on the relationship between marketing innovation strategy and the competitive advantage of insurance companies.

H_{4c}: The regulatory framework has a mediating effect on the relationship between process innovation strategy and the competitive advantage of insurance companies.

5. RESEARCH METHODOLOGY

5.1 RESEARCH DESIGN AND APPROACH

This study adopts a quantitative correlational research design, justified by its suitability for examining the relationships between strategic innovation dimensions, product, process, and market innovations and competitive advantage within insurance companies in Zambia. We employed structured questionnaires distributed via Google Forms to 309 insurance employees; the research ensures a broad data set that enhances generalisability within the

context of a developing economy. The use of Pearson correlation, hierarchical multiple regression, and mediation analysis through SPSS allows for statistical testing of direct and indirect relationships, particularly the mediating role of the regulatory framework. This approach is appropriate for uncovering interactions among variables and provides empirical evidence to guide strategic decision-making in the insurance sector, especially in environments where regulatory dynamics significantly influence innovation outcomes.

5.2 POPULATION AND SAMPLE

The target population of the study consisted of 500 employees in Kitwe (Zambia Insurance Report, 2023). With a margin of error of 5%, a 95% confidence level, and a 50% response distribution, the Raosoft online sample size calculator suggests 300 is the representative sample because the researcher cannot obtain data from the complete population due to time and resource restrictions. Since multiple regression analyses require a probabilistic sampling method, the random systematic sampling method will be employed. A sample size of 300 responders is appropriate for the study since it addresses any deviations from reliability analysis and normalcy standards. (Allen-Leigh *et al.*, 2017; Mwiya, 2014).

5.3 DATA COLLECTION AND SAMPLE PROFILE

Data was collected using Google Forms, and an online self-administered survey was constructed and shared via a link on social media platforms. Table 1 reveals that the sample was predominantly male, comprising 72.5% of respondents, while females accounted for 27.5%. The age distribution indicates that 33.7% of participants were between 20 and 30. Regarding educational qualifications, 33.3% held certificates and 28.8% possessed degrees. Additionally, 52.4% of respondents reported having 10 to 15 years of experience in the insurance sector, typically in mid to senior management position.

TABLE 1 SAMPLE PROFILE

Response	**Frequency**	**Valid Percent**
Female	85	27.5
Male	224	72.5
Total	309	100
Age range	**Frequency**	**Valid Percent**
20 – 30	104	33.7
31 – 40	94	30.4
41 – 50	90	29.1
51 – 60	18	5.8
61 and above	3	1
Total	309	100
Marital Status		
Response	**Frequency**	**Valid Percent**
Married	245	79.3
Single	64	20.7
Total	309	100

Academic Qualification		
Response	**Frequency**	**Valid Percent**
Grade 12	62	20.1
Certificate	103	33.3
Diploma	44	14.2
Degree	89	28.8
Masters Degree	9	2.9
PhD	2	0.6
Total	309	100
Years served		
Response	**Frequency**	**Valid Percent**
Less than 5 years	26	8.4
5 – 10 years	86	27.8
10 – 15 years	162	52.4
15 – 20 years	30	9.7
21 years and above	5	1.6
Total	309	100

5.4 MEASUREMENT MODEL AND INTERNAL VALIDITY JUSTIFICATIONS

Table 2 outlines the constructs and items comprising the study's measurement model, with all measurement items adapted from established literature to ensure internal validity (Kisuya et al., 2023). Each item was assessed using a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree), allowing respondents to express varying levels of agreement. The reliability and internal consistency of the instrument were evaluated using Cronbach's alpha using SPSS, a statistical measure that assesses the degree of interrelatedness among items. While a coefficient of 0.70 or higher indicates acceptable reliability, values as low as 0.60 are deemed acceptable within the social sciences (Field, 2009).

TABLE 2 MEASUREMENT MODEL

Variable	Item	Source	Cronbach's Alpha
Product innovation	PI1 My company normally introduces new insurance products from time to time to suit the customer's needs PI2 My company normally introduces new insurance-related services from time to time to suit the customer's needs P13 My company normally improves the existing products from time to time to suit the customer's needs PI4 My company normally improves the existing insurance-related services from time to time to suit the customer's needs PI5 My company offers a wide range of products based on the customer's preferences compared to the competitors	Kisuya et al. (2023)	0.638
Process innovation	PRI1 My company consistently improves the delivery systems to enhance customer value PRI2 My company consistently invests in the application of technology in service delivery to enhance customer experience PRI3 My company consistently adopts new delivery processes to enhance customer value PRI4 My company consistently improves the existing processes to enhance customer value PRI5 My company consistently adopts new methods of service provision to enhance customer value	Kisuya et al. (2023)	0.796
Marketing innovation	MI1 My company has resorted to the adoption of online marketing platforms as part of its marketing approaches MI2 My company has resorted to the adoption of mobile apps as part of its marketing approaches MI3 My company has resorted to the adoption of digital advertising as part of its marketing approaches MI4 My company has resorted to the adoption of media marketing as part of its marketing approaches MI5 My company has resorted to the adoption of social media platforms (Facebook, Instagram, Twitter (now X)) as part of its marketing approaches	Kisuya et al. (2023)	0.791

Variable	Item	Source	Cronbach's Alpha
Regulatory framework	RF1 Competition regulations affect the pursuit of various marketing approaches [RF2 Compliance policies affect the adoption of various insurance products and services RF3 Certification policies affect the adoption of various insurance products and services RF4 Corporate governance requirements affect a company's operation RF5 Interoperability regulations affect the adoption of various insurance products and services	Kisuya et al. (2023)	0.870
Competitive advantage	CA1 Our company offers competitive cost (affordable premiums) CA2 Our company has been consistently performing better for the last 5 years CA3 The insurance products we offer are completely differentiated and different from those of competitors CA4 The insurance services we offer are completely differentiated and different from those of competitors CA5 We are flexible in our approach and services to our customers CA6 We have a wide geographical coverage with branches across Zambia CA7 Our customer base has been increasing steadily over the years, and thus our share in the market is significant	Kisuya et al. (2023)	0.902

6. RESEARCH FINDINGS

6.1 CORRELATIONS STATISTICAL ANALYSES

The correlation analysis presented in Table 3 examines the relationships between control variables and competitive advantage. The results indicate that gender ($r = -0.030$, $p > 0.05$) and length of service ($r = -0.079$, $p > 0.05$) do not exhibit statistically significant associations with competitive advantage. However, academic qualification demonstrates a statistically significant but weak negative correlation ($r = -0.116^*$, $p < 0.05$), suggesting that higher academic attainment may be modestly associated with lower levels of competitive advantage. It is important to note that the negative correlation reflects the direction rather than the strength of the relationship (Pallant, 2020), and may imply the presence of mediating variables (Mwiya et al., 2019; Zhao et al., 2010). In contrast, all independent variables, product innovation ($r = 0.210^{**}$, $p < 0.01$), process innovation ($r = 0.389^{**}$, $p < 0.01$), market innovation ($r = 0.408^{**}$, $p < 0.01$), and regulatory framework ($r = 0.569^{**}$, $p < 0.01$) exhibit statistically significant positive correlations with competitive advantage. According to Cohen's (1988) guidelines, these correlations range from small to large in magnitude, indicating that each independent variable contributes uniquely and positively enhances competitive advantage.

TABLE 3 CORRELATION ANALYSIS

No.	Variables	Mean	Std. Dev	1	2	3	4	5	6	7	8
1	Competitive Advantage	1.900	0.672	1							
2	Regulatory Framework	1.788	0.673	.569**	1						
3	Gender	0.720	0.447	-.030	-0.009	1					
4	Academic Qualification	2.630	1.211	-.116*	-0.153**	0.058	1				
5	Length Served	2.680	0.824	-.079	-0.042	0.097	0.406**	1			
6	Product Innovation	1.647	0.394	.210**	0.264**	-0.025	-0.023	-0.084	1		
7	Process Innovation	1.829	0.533	.389**	0.461**	0.087	-0.164**	-0.129*	0.233**	1	
8	Marketing Innovation	1.828	0.558	.480**	0.494**	0.033	-0.151**	-0.91	0.237**	0.473**	1

* Correlation is significant at the .05 level (2-tailed).

** Correlation is significant at the .01 level (2-tailed).

6.2 HYPOTHESIS TESTING RESULTS AND INTERPRETATION

The findings of the hypothesis tests, as interpreted by multiple regression analysis, are shown below.

The hierarchical regression analysis presented in Table 4 evaluates the incremental contribution of various predictors to competitive advantage.

Model 1, which includes only the control variables (gender, academic qualification, and length of service), explains a negligible 0.5% of the variance in competitive advantage ($R^2 = 0.005$) and shows a weak relationship ($R = 0.123$), with none of the control variables reaching statistical significance.

Model 2, the inclusion of product innovation significantly improves the model ($R^2 = 0.045$; $F = 4.613^{***}$), with product innovation emerging as a significant predictor ($\beta = 0.206^{***}$, $p < 0.001$), though the overall effect remains small ($R = 0.239$).

Model 3 introduces process innovation, which, alongside product innovation ($\beta = 0.125^{*}$, $p < 0.05$) and process innovation ($\beta = 0.356^{***}$, $p < 0.001$), significantly enhances the model's explanatory power to 15.9% ($R^2 = 0.159$), with a moderate effect size ($R = 0.415$).

Model 4 incorporates market innovation, which significantly predicts competitive advantage ($\beta = 0.366^{***}$, $p < 0.001$), increasing the explained variance to 25.9% ($R^2 = 0.259$) and yielding a strong overall relationship ($R = 0.523$).

Finally, Model 5 adds the regulatory framework, resulting in the most robust model ($R^2 = 0.370$; $R = 0.620$; $F = 26.824^{***}$), where market innovation ($\beta = 0.231^{***}$, $p < 0.001$) and regulatory framework ($\beta = 0.408^{***}$, $p < 0.001$) remain significant predictors. In contrast, the effects of product and process innovation become statistically insignificant. These findings suggest that while innovation dimensions contribute incrementally to competitive advantage, the regulatory framework and market innovation are the most influential predictors in the context of insurance companies.

TABLE 4 HIERARCHICAL MULTIPLE REGRESSION ANALYSES

		Model 1		Model 2		Model 3		Model 4		Model 5		
		Beta	S.E	Beta	S.E	Beta	S.E	Beta	S.E	Beta	S.E	VIF
0	Gender	-0.021	0.086	-0.017	0.084	-0.056	0.079	-0.057	0.075	-0.04	0.069	1.026
1	Academic qualification	-0.101	0.035	-0.103	0.034	-0.054	0.034	-0.072	0.031	-0.087	0.029	1.238
2	Length saved	-0.036	0.051	-0.018	0.05	0.005	0.047	0.002	0.044	-0.027	0.041	1.226
3	Product Innovation	0.219		0.206***	0.095	0.125*	0.087	0.092	0.087	0.042	0.081	1.112
4	Process Innovation					0.356***	0.069	0.199***	0.072	0.087	0.069	1.46
5	Marketing Innovation							0.366***	0.068	0.231***	0.066	1.498
6	Regulatory Framework									0.408***	0.055	1.499
7	F	1.563		4.613***		12.611***		18.915		26.824***		
8	F Change	1.563		13.572***		42.107***		41.918		54.265***		

		Model 1	Model 2	Model 3	Model 4	Model 5
9	R	0.123	0.239	0.415	0.523	0.62
10	R Square	0.015	0.057	0.172	0.273	0.384
11	R Squared Adjusted	0.005	0.045	0.159	0.259	0.37
12	R Squared Changed	0.015	0.042	0.115	0.101	0.111

Significant at 0.1%*** Significant at 1%** Significant at 5%*

6.3 STATISTICAL MEDIATION ANALYSES AND INTERPRETATION

To test that the regulatory framework is an intermediate variable in the existing link between product innovation, process innovation, market innovation and competitive advantage, this study followed the work of Baron and Kenny (1986) and Preacher and Hayes (2008). These authors argue that a variable's mediation must meet three conditions. Firstly, the independent variable significantly predicts both the dependent and mediator variables (Preacher & Hayes, 2008). Secondly, the mediator variable is a significant predictor of the dependent variable. Thirdly, the effects of the independent variable on the dependent variable are reduced when the mediator variable is added to the regression model (Baron & Kenny, 1986). Mediation is completely acceptable if the effect of the independent variable is no longer significant when the mediator variable is added.

The mediation analysis presented in Table 5 demonstrates that the regulatory framework significantly mediates the relationship between innovation dimensions, product, process, market innovation, and competitive advantage. Specifically, product innovation exerts a significant positive effect on the regulatory framework ($a = 0.451^{***}$, $p < 0.001$), which in turn significantly influences competitive advantage ($b = 0.551^{***}$, $p < 0.001$). The direct effect of product innovation on competitive advantage ($c = 0.359^{***}$, $p < 0.001$) diminishes when the regulatory framework is included ($c' = 0.110^{***}$, $p < 0.01$), indicating partial mediation, further supported by a significant indirect effect ($Z = 4.413^{***}$, $p < 0.001$).

Similarly, process innovation significantly predicts the regulatory framework ($a = 0.582^{***}$, $p < 0.001$), which again has a significant impact on competitive advantage ($b = 0.494^{***}$, $p < 0.001$). The direct effect of process innovation on competitive advantage ($c = 0.490^{***}$, $p < 0.001$) diminishes upon inclusion of the regulatory framework ($c' = 0.203^{***}$, $p < 0.01$), with a significant mediation effect confirmed ($Z = 6.569^{***}$, $p < 0.001$).

Lastly, market innovation shows a strong positive association with the regulatory framework ($a = 0.596^{***}$, $p < 0.001$), which significantly contributes to competitive advantage ($b = 0.438^{***}$, $p < 0.001$). The total effect of market innovation on competitive advantage ($c = 0.577^{***}$, $p < 0.001$) diminishes when the regulatory framework is accounted for ($c' = 0.316^{***}$, $p < 0.01$), and the mediation effect is statistically significant ($Z = 6.424^{***}$, $p < 0.001$).

These findings collectively confirm that the regulatory framework is a significant mediating variable in the relationship between innovation strategies and competitive advantage.

TABLE 5 MEDIATION ANALYSES

Model/ Hypothesis	Independent Variable (X)	Mediating Variable (M)	Dependent Variable (Y)	Effect of IV on Mediator (a)	Unique Effect of Mediator (b)	Direct effect (c')	Total Effect (C)	Sobel Test (Z)	Degree of Mediation
1	Product Innovation	RF	CA	0.451***	0.551***	0.110***	0.359***	4.413***	Partial
2	Process Innovation	RF	CA	0.582***	0.494***	0.203***	0.490***	6.569***	Partial
3	Market Innovation	RF	CA	0.596***	0.438***	0.316***	0.577***	6.424***	Partial

Significant at 0.1%*** Significant at 1%** Significant at 5%*

RF-Regulatory framework; CA-Competitive Advantage

Table 6 below summarises all the hypotheses testing in the model as follows:

TABLE 6: SUMMARY OF HYPOTHESES TESTING

Hypotheses	Statistic	Test	Result
H_1: Product innovation strategy significantly affects the competitive advantage of insurance companies.	P=.611	Regression	Not Supported
H_2: Process innovation strategy significantly affects the competitive advantage of insurance companies.	P=.112	Regression	Not Supported
H_3: Marketing innovation strategy significantly affects the competitive advantage of insurance companies.	P=000	Regression	Supported
H4: The regulatory framework significantly affects the competitive advantage of insurance companies.	P=000	Regression	Supported
H4a: The regulatory framework has a mediating effect on the relationship between product innovation strategy and the competitive advantage of insurance companies.	Z=4.413***	Sobel-test	Supported
H4b: The regulatory framework has a mediating effect on the relationship between process innovation strategy and the competitive advantage of insurance companies.	Z=6.424***	Sobel-test	Supported
H4c: The regulatory framework has a mediating effect on the relationship between marketing innovation strategy and the competitive advantage of insurance companies.	Z=6.569***	Sobel-test	Supported

*Sig 5%, **Sig 1%, ***Sig 0.1%

7. DISCUSSION OF FINDINGS

The findings present a nuanced understanding of the relationship between product, process and marketing innovation, the regulatory framework, and the subsequent effects on competitive advantage as discussed below:

7.1 PRODUCT INNOVATION AND COMPETITIVE ADVANTAGE

The findings indicate that product innovation (Beta = 0.042, p > 5%) does not have a significant relationship with the competitive advantage of insurance companies in Kitwe, Zambia. However, Tavassoli and Karlsson (2015) found that companies' product innovativeness increases companies' competitiveness. This suggests that while insurance companies may introduce new or improved products, these innovations do not necessarily enhance their competitive positioning. One possible explanation is that insurance products are often standardised due to regulatory requirements, limiting company offering differentiation. Additionally, customer preferences in the insurance industry may be more influenced by service quality, pricing, and trust rather than product novelty. As a result, merely introducing new insurance products without addressing broader market needs, such as affordability and accessibility, may not yield a competitive edge.

7.2 PROCESS INNOVATION AND COMPETITIVE ADVANTAGE

Similarly, process innovation (Beta = 0.087, p > 5%) does not significantly impact competitive advantage among insurance companies in Kitwe. However, Alzoubi et al. (2022) and Odhiambo and Mang (2022) found that process innovation strategy improves competitiveness. This could be attributed to the fact that efficiency improvements are often internally focused and may not be immediately perceived as value-adding by customers. Furthermore, process innovation alone may not provide a distinctive edge in a market where competitors adopt similar technological advancements. Insurance companies must ensure that process improvements lead to tangible client benefits, such as reduced processing time, enhanced claims management, and improved customer service, to contribute meaningfully to competitiveness.

7.3 MARKET INNOVATION AND COMPETITIVE ADVANTAGE

Unlike product and process innovation, market innovation (Beta = 0.231***, p < 0.1%) significantly influences the competitive advantage of insurance companies in Kitwe. Similarly, according to Hong (2015), innovative marketing strategies strengthen brand relationships and customer experiences, thereby influencing brand marketing efforts and enabling brands to be more customer-focused. Mira et al. (2024) also found that the development strategies adopted by radio stations in Kenya, whether cooperative or competitive, are crucial for fostering innovation and ensuring progress. Market innovation involves the exploration of new markets, customer segments, and distribution channels, which can significantly enhance an insurer's reach and appeal. The strong relationship observed suggests that companies that adopt innovative marketing strategies, leverage digital platforms, and tailor their services to evolving customer needs gain a competitive edge. In an industry where customer acquisition and retention are critical, insurance companies focusing on market-driven innovations such as mobile insurance, personalised customer engagement, and alternative distribution networks are better positioned to differentiate themselves.

7.4 REGULATORY FRAMEWORK AND COMPETITIVE ADVANTAGE

The regulatory framework is the most significant factor influencing competitive advantage in the insurance sector (Beta = 0.408***, p < 0.1%). Similarly, Niwash *et al.* (2022) found that competitive intensity and the regulatory regime significantly influence the relationship between innovation and competitive advantage in companies. Competitive intensity refers to fierce competition due to numerous competitors and limited growth opportunities. This suggests that compliance with and adaptation to regulatory policies profoundly impact an insurer's ability to compete effectively. Companies that align their operations with legal requirements in highly regulated industries like insurance, maintain strong governance structures, and proactively respond to policy changes tend to build trust and credibility.

Additionally, regulatory frameworks can create entry barriers or facilitate market expansion, influencing the industry landscape. Insurance companies that strategically navigate regulatory complexities, leverage compliance as a competitive strength, and advocate for favourable policy reforms are likely to outperform competitors. This underscores the critical role of regulatory considerations in shaping the competitive positioning of insurance companies in Kitwe.

7.5 THE MEDIATING EFFECT OF REGULATORY FRAMEWORK

The mediation analysis reveals that the regulatory framework plays a statistically significant mediating role in the relationship between innovation strategies, namely product, process, and market innovation, and competitive advantage among insurance companies in Zambia (Niwash et al., 2022). The results indicate that while each innovation strategy independently contributes to competitive advantage, their effects are substantially enhanced when mediated by a supportive regulatory environment (Bibi et al., 2020; Kimani & Wagoki, 2015; Hadj et al., 2020). Specifically,

product innovation significantly influences the regulatory framework (a = 0.451***, p < 0.001), which in turn has a strong positive effect on competitive advantage (b = 0.551***, p < 0.001), with a significant indirect effect (Z = 4.413***, p < 0.001), confirming partial mediation. This suggests that regulatory alignment enhances the effectiveness of product innovation by ensuring compliance and fostering market trust.

Similarly, process innovation demonstrates a significant positive effect on the regulatory framework (a = 0.582***, p < 0.001), which again significantly predicts competitive advantage (b = 0.494***, p < 0.001), with a robust indirect effect (Z = 6.569***, p < 0.001). These findings imply that regulatory structures facilitate the successful implementation of process innovations, such as operational efficiency and digital transformation, thereby strengthening competitive positioning.

Market innovation also shows a significant mediated relationship, with a strong effect on the regulatory framework (a = 0.596***, p < 0.001) and a significant indirect effect on competitive advantage (Z = 6.424***, p < 0.001). This underscores the importance of regulatory support in enabling market expansion, customer engagement, and digital marketing strategies.

While innovation strategies are essential drivers of competitive advantage, their impact is significantly amplified when embedded within an institutional and regulatory context. For insurance companies in Zambia, this emphasises the importance of aligning innovation initiatives with regulatory compliance to maximise outcomes in a competitive and evolving market landscape.

8. CONCLUSIONS, CONTRIBUTIONS AND IMPLICATIONS

This study contributes to the literature on innovation strategy and competitive advantage by highlighting the mediating role of regulatory frameworks within the insurance sector. Theoretically, it extends existing models by demonstrating that regulatory frameworks function as compliance mechanisms and strategic enablers that enhance innovation effectiveness. Empirically, it provides context-specific evidence from a developing economy, showing that product, process, and market innovations are more impactful when aligned with supportive regulatory environments. Practically, the findings offer actionable insights for managers and policymakers, emphasising the importance of integrating innovation efforts with regulatory compliance to maximise competitive outcomes, such as in Zambia.

Despite its contributions, the study is limited by its geographic focus, reliance on quantitative methods, and the exclusion of other innovation types such as service or business model innovation. Additionally, regulatory frameworks were treated as a single construct, overlooking the complexity of specific regulatory components. Future research should address these limitations by expanding the geographic scope, adopting mixed-methods approaches, exploring additional innovation dimensions, and disaggregating regulatory variables. Longitudinal studies are also recommended to capture the evolving dynamics between innovation, regulation, and competitive advantage over time. These directions will deepen understanding and enhance the applicability of findings across diverse contexts and industries.

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